



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-1108; Product Identifier 2012-NE-44-AD; Amendment 39-19362; AD 2018-17-08]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce plc Turbojet Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are superseding Airworthiness Directive (AD) 2016-03-03 for all Rolls-Royce plc (RR) Viper Mk. 521, Viper Mk. 522, and Viper Mk. 601-22 turbojet engines. AD 2016-03-03 required reducing the life of certain critical parts. This AD requires reducing the life of certain critical parts and adds additional engine parts to the applicability. This AD was prompted by a determination made by RR that additional parts for the applicable RR Viper turbojet engine models are affected. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact DA Services Operations Room at Rolls-Royce plc, Defense Sector Bristol, WH-70, P.O. Box 3, Filton, Bristol BS34 7QE, United Kingdom; phone: +44 (0) 117 97 90700; fax: +44 (0) 117 97 95498; email: [defence-operations-room@rolls-royce.com](mailto:defence-operations-room@rolls-royce.com). You may view this service

information at the FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1108.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1108; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information, regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is Document Operations, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: [herman.mak@faa.gov](mailto:herman.mak@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2016-03-03, Amendment 39-18390 (81 FR 12585, March 10, 2016) (“AD 2016-03-03”). AD 2016-03-03 applied to all RR Viper Mk. 521, Viper Mk. 522, and Viper Mk. 601-22 turbojet engines. The NPRM published in the Federal Register on December 15, 2017 (82 FR 59560). The NPRM was prompted by RR determining that additional compressor rotating shrouds and the compressor main shaft, installed on the affected Viper turbojet engines, require a reduction in their cyclic life limits. Also since we issued AD 2016-03-03, the European Aviation Safety Agency (EASA) has issued AD

2017-0148, dated August 15, 2017, which requires reducing the cyclic life limits of the affected parts. The NPRM proposed to add additional engine parts to the applicability. We are issuing this AD to address the unsafe condition on these products.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes.

### **Related Service Information under 1 CFR Part 51**

We reviewed RR Alert Service Bulletin (ASBs) Mk. 521 Number 72-A408, Circulation A; Mk. 521 Number 72-A408, Circulation B; Mk. 522 Number 72-A413, Circulation A; Mk. 522 Number 72-A412, Circulation B; and Mk. 601-22 Number 72-A207; all identified as Revision 1 and all dated June 2017.

RR ASBs Mk. 521 Number 72-A408, Circulation A (Revision 1) and Mk. 521 Number 72-A408, Circulation B (Revision 1) describe applicable part numbers (P/Ns) and revised cyclic life limits for parts installed on the Viper Mk. 521 turbojet engine. RR ASBs Mk. 522 Number 72-A413, Circulation A (Revision 1), and Mk. 522 Number 72-A412, Circulation B (Revision 1) describe applicable P/Ns and revised cyclic life limits for parts installed on the Viper Mk. 522 turbojet engine. The content of Circulation A and B of these respective ASBs is identical. RR uses the designations “Circulation A” and “Circulation B” to determine distribution of service information, based on the capabilities of maintenance facilities.

RR ASB Mk. 601-22 Number 72-A207, Rev. 1, describes applicable P/Ns and revised cyclic life limits for parts installed on the Viper Mk. 601-22 turbojet engine.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

We estimate that this AD affects 46 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Remove and replace parts	4 work-hours X \$85 per hour = \$340	\$75,000	\$75,340	\$3,465,640

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance

and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

### **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2016-03-03, Amendment 39-18390 (81 FR 12585, March 10, 2016), and adding the following new AD:

2018-17-08 **Rolls-Royce plc (Type Certificate previously held by Rolls-Royce (1971) Limited, Bristol Engine Division)**: Amendment 39-19362; Docket No. FAA-2017-1108; Product Identifier 2012-NE-44-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2016-03-03, Amendment 39-18390 (81 FR 12585, March 10, 2016).

#### **(c) Applicability**

This AD applies to all Rolls-Royce plc (RR) Viper Mk. 521, Viper Mk. 522, and Viper Mk. 601-22 turbojet engines.

#### **(d) Subject**

Joint Aircraft System Component (JASC) Code 7230, Compressor Section.

#### **(e) Unsafe Condition**

This AD was prompted by a review by RR of the lives of certain critical parts. We are issuing this AD to prevent failure of life-limited parts. This unsafe condition, if not addressed, could result in uncontained part release, damage to the engine, and damage to the airplane.

#### **(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) Remove from service any Group A component listed in Table 1 of the RR Alert Service Bulletins (ASBs) listed in paragraphs (g)(1)(i) through (v) of this AD within 30 days after the effective date of this AD, or before the part exceeds the revised life limit specified in the applicable ASB, whichever occurs later.

(i) RR ASB Mk. 521 Number 72-A408, Circulation A (Revision 1), dated June 2017.

(ii) RR ASB Mk. 521 Number 72-A408, Circulation B (Revision 1), dated June 2017.

(iii) RR ASB Mk. 522 Number 72-A413, Circulation A (Revision 1), dated June 2017.

(iv) RR ASB Mk. 522 Number 72-A412, Circulation B (Revision 1), dated June 2017.

(v) RR ASB Mk. 601-22 Number 72-A207, Rev. 1, dated June 2017.

(2) Reserved.

**(h) Installation Prohibition**

After the effective date of this AD, do not install any Group A component identified in Table 1 of the RR ASBs in paragraph (g)(1)(i) through (v) of this AD into any engine, or return any engine to service with any affected part installed, if the affected part exceeds the revised life limit specified in the applicable ASB.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO Branch, FAA, may approve AMOCs for this AD, if requested, using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification

office, send it to the attention of the person identified in paragraph (j)(1) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

(1) For more information about this AD, contact Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

(2) Refer to European Aviation Safety Agency (EASA) AD 2017-0148, dated August 15, 2017, for more information. You may examine the EASA AD on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1108.

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Rolls-Royce plc (RR) Alert Service Bulletin (ASB) Mk. 521 Number 72-A408, Circulation A (Revision 1), dated June 2017.

(ii) RR ASB Mk. 521 Number 72-A408, Circulation B (Revision 1), dated June 2017.

(iii) RR ASB Mk. 522 Number 72-A413, Circulation A (Revision 1), dated June 2017.

(iv) RR ASB Mk. 522 Number 72-A412, Circulation B (Revision 1), dated June 2017.



(v) RR ASB Mk. 601-22 Number 72-A207, Rev. 1, dated June 2017.

(3) For service information identified in this AD, contact DA Services Operations Room at Rolls-Royce plc, Defense Sector Bristol, WH-70, P.O. Box 3, Filton, Bristol BS34 7QE, United Kingdom; phone: +44 (0) 117 97 90700; fax: +44 (0) 117 97 95498; email: defence-operations-room@rolls-royce.com.

(4) You may view this service information at FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:  
<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on August 10, 2018.

Karen M. Grant,  
Acting Manager, Engine and Propeller Standards Branch,  
Aircraft Certification Service.

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